

SINGAPORE STANDARD

Methods of test for paints, varnishes and related materials

– Part B1 : Determination of film thickness

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– Part B1 : Determination of film thickness

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This Singapore Standard was approved by the Chemical Standards Committee on behalf of the Singapore Standards Council on 25 January 2013.

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Housing & Development Board
Nippon Paint (Singapore) Co Pte Ltd
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Setsco Services Pte Ltd
TUV SUD PSB Pte Ltd

Contents

	Page
National Foreword _____	7
Foreword _____	8

CLAUSES

0	Introduction _____	9
1	Scope _____	9
2	Normative references _____	9
3	Terms and definitions _____	10
4	Determination of wet-film thickness _____	11
5	Determination of dry-film thickness _____	18
6	Determination of thickness of uncured powder layers _____	37
7	Measurement of film thickness on rough surfaces _____	40
8	Test report _____	42

ANNEX

A	Overview of method (informative) _____	43
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TABLES

A.1	Determination of wet-film thickness _____	43
A.2	Determination of dry-film thickness _____	44
A.3	Determination of the film thickness of non-cross-linked powders _____	45

FIGURES

1	Example of a comb gauge _____	12
2	Example of a wheel gauge _____	13
3	Example of a dial gauge _____	14
4	Interaction of radiation with the specimen in photothermal thickness measurement, showing surface deformation _____	16
5	Outside micrometer _____	19
6	Dial gauge fixed to a stand _____	20
7	Foil thickness gauge _____	20
8	Micrometer depth gauge _____	22
9	Dial depth gauge _____	22
10	Surface profile scanner _____	23

		Page
11	Cross-sectioned specimen _____	25
12	Symmetrical cut, conical bore and sloping cut _____	25
13	Magnetic pull-off gauge _____	29
14	Hall Probe _____	30
15	Principle of magnetic-induction gauge _____	31
16	Principle of eddy-current gauge _____	32
17	Beta backscatter method _____	33
18	Interaction of radiation with the specimen in photothermal thickness measurement ____	34
19	Ultrasonic thickness gauge _____	36
20	Probe of magnetic-induction gauge for powder coating thickness measurements ____	38
	 Bibliography _____	 46

National Foreword

This Singapore Standard was prepared by the Working Group on the Review of Singapore Standard SS 5 Methods of Test for Paints, Varnishes and Related Materials appointed by the Technical Committee on Surface Coatings under the direction of the Chemical Standards Committee.

This is a revision of SS 5 : Part B1 : 2003 'Methods of test for paints, varnishes and related materials – Determination of film thickness'. It is an identical adoption of the International Standard ISO 2808 : 2007 'Paints and varnishes – Determination of film thickness', published by the International Organization for Standardization.

Where appropriate, the words 'International Standard' in ISO 2808 : 2007 shall be read as 'Singapore Standard'. The reference 'ISO 2808 : 2007' shall be read as 'SS 5 : Part B1'.

For an overview of other parts to Singapore Standard 5, it is recommended to read the information in SS 5 : Part 0 'General introduction' which is issued separately.

Acknowledgement is made for the use of information from the above reference.

Attention is drawn to the possibility that some of the elements of this Singapore Standard may be the subject of patent rights. Enterprise Singapore shall not be held responsible for identifying any or all of such patent rights.

NOTE

1. *Singapore Standards (SSs) and Technical References (TRs) are reviewed periodically to keep abreast of technical changes, technological developments and industry practices. The changes are documented through the issue of either amendments or revisions.*
2. *An SS or TR is voluntary in nature except when it is made mandatory by a regulatory authority. It can also be cited in contracts making its application a business necessity. Users are advised to assess and determine whether the SS or TR is suitable for their intended use or purpose. If required, they should refer to the relevant professionals or experts for advice on the use of the document. Enterprise Singapore shall not be liable for any damages whether directly or indirectly suffered by anyone or any organisation as a result of the use of any SS or TR.*
3. *Compliance with a SS or TR does not exempt users from any legal obligations.*

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 2808 was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 9, *General test methods for paints and varnishes*.

This fourth edition cancels and replaces the third edition (ISO 2808:1997), which has been technically revised. The main changes are as follows:

- a) The structure of the standard has been changed into four main clauses:
 - 1) determination of wet-film thickness;
 - 2) determination of dry-film thickness;
 - 3) determination of the thickness of uncured powder layers; and
 - 4) measurement of film thickness on rough surfaces.
- b) Methods using photothermal, radiological and acoustic techniques have been added.
- c) The split-beam method has been deleted as such instruments are no longer manufactured.

Methods of test for paints, varnishes and related materials – Part B1 : Determination of film thickness

0 Introduction

Measurement of film thickness depends on the following steps:

- a) calibration of the measurement instrument, typically performed by the manufacturer or by any qualified laboratory;
- b) verification of the instrument (an accuracy check performed by the user at regular intervals, typically before each series of measurements);
- c) subsequent adjustment, if necessary, of the instrument so that the thickness readings it gives match those of a specimen of known thickness. For a dry-film thickness gauge this would mean zeroing it on the uncoated surface, using devices of known thickness such as shims, or using a coated specimen of known film thickness;
- d) measurement.

1 Scope

This International Standard describes a number of methods that are applicable to the measurement of the thickness of coatings applied to a substrate. Methods for determining wet-film thickness, dry-film thickness and the film thickness of uncured powder layers are described. Reference is made to individual standards where these exist. Otherwise the method is described in detail.

An overview on the methods is given in Annex A, in which the field of application, existing standards and the precision are specified for the individual methods.

This International Standard also defines terms concerning the determination of film thickness.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 463	Geometrical Product Specifications (GPS) — Dimensional measuring equipment — Design and metrological characteristics of mechanical dial gauges
ISO 3611	Micrometer callipers for external measurement
ISO 4618:2006	Paints and varnishes — Terms and definitions
ISO 8503-1	Preparation of steel substrates before application of paints and related products — Surface roughness characteristics of blast-cleaned steel substrates — Part 1: Specifications and definitions for ISO surface profile comparators for the assessment of abrasive blast-cleaned surfaces